

REMARKS

Claims 1 – 10 are pending in this application with claims 1, 4, 6 and 7 being amended by this response. New claims 8 – 10 are added for consideration by this response. Claim 4 has been formally amended to remove the words “any of” from the first line of the claim thereby fixing a typographical error that occurred during translation of the claims. Claim 6 has been formally amended to conform to the corresponding description on page 7, lines 18 – 19 of the specification.

Objection to the Drawings

The drawings are objected to because Figure 1 does not include an explanation for the elements shown. Figure 2 is also objected to for not including a title of the components shown therein. Figure 1 has been replaced with a new Figure 1 including legends for each respective element contained therein. Figure 2 has been amended to include the title “Audio Encoder” as suggested by the Examiner. In view of the above remarks and amended drawings, it is respectfully submitted that the objection to the drawing has been satisfied and should be removed.

Objection to the Claims

Claim 6 is objected to for failing to provide antecedent basis for all elements therein. Claim 6 has been amended in accordance with the remarks of the Examiner by deleting the word “the” prior to “discontinuities”. In view of the above remarks and amendment to claim 6, it is respectfully submitted that this objection has been satisfied and should be withdrawn.

Rejection of Claims 1, 5, and 7 under 35 USC § 102(e)

Claims 1, 5 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Zhang et al., (U.S. Patent No. 6,611,624).

The present claimed invention discloses a method and apparatus for aligning first audio data with related second audio or video data before multiplexing. Input time stamps are generated which become linked with audio or video data to be encoded and which are used to control the delay of the encoding process. Output time stamps are derived from the input time stamps by using a data delay constant and are assigned to the encoded data for indicating the output time. The encoded data with assigned output time stamps are buffered before output. The output delay of the first audio data is adapted to the output time of the related second audio or video data. In the case of a change of the output delay, the data delay constant is changed and any already assigned output time stamps remain unchanged. For data for which output time stamps are not already assigned, the output time stamps are calculated using the new data delay constant.

Zhang et al. disclose a system for performing frame accurate bitstream splicing. This system includes a first pre-buffer, a second pre-buffer, a seamless splicer, and a post buffer. The system also includes a time stamp extractor, a time stamp adjuster, and a time stamp replacer for time correction. The seamless splicer receives two streams via the first and second pre-buffers and produces a single spliced bit-stream at its output in response to the cue tone signal. The splicer provides the first bitstream, re-encodes portions of the first and second bit streams proximate the splicing point and then switches to providing a second bitstream.

In other words, Zhang et al. describe a system and method for frame accurate splicing of compressed bit streams. The purpose of the Zhang's et al. system is illustrated in column 1, lines 33 – 34, which discloses “a process that replaces part of a digital compressed bitstream by another compressed bitstream which may have been encoded off-line in a different location or at a different time.” Thus, in Zhang et al., part of the first bit stream is discarded. The result is then a single stream having parts of both input data streams. (see Zhang et al., column 1, line 12, and Figures 1, 6 – 8). Therefore Zhang et al. include two points of transition between the bit streams, the first being the entry point and the second being the exit point at which the streams were spliced by the splicer (see Zhang et al., column 1, lines 46 – 48 and 52 – 54).

However, Zhang et al. neither disclose nor suggest a method or apparatus for “aligning first audio data with related second audio or video data before multiplexing” as in the present claimed invention. Thus, contrary to the second stream disclosed in Zhang et al. which is spliced by the seamless splicer, the “related second audio or video data” of the present claimed invention is not changed and is used a reference. Additionally, Zhang et al. neither disclose nor suggest “the output delay of the first audio data is adapted to the output time of the related second audio or video data” as in the present claimed invention. This feature of the present claimed invention allows for programming to be continued with little or no interruption to the user despite the change if delay which has been detected.

Therefore, as Zhang et al. neither disclose nor suggest a method or apparatus for “aligning first audio data with related second audio or video data before multiplexing” wherein “the output delay of the first audio data is adapted to the output time of the related second audio or video data” as in the present claimed invention, it is respectfully submitted that the present invention as claimed in independent claims 1 and 7 is not anticipated by Zhang et al. Thus, as claim 5 is dependent on independent claim 1, it is respectfully submitted that claim 5 is not anticipated for the same reasons as discussed above with respect to claim 1. It is further respectfully submitted that this rejection has been satisfied and should be withdrawn.

Rejection of Claims 2-3 and 6 under 35 USC § 103(a)

Claims 2-3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al. (U.S. Patent No. 6,611,624).

As discussed above, Zhang et al. disclose a system for frame accurate bit stream splicing of two data streams that are compressed. However, Zhang et al. neither disclose nor suggest a method or apparatus for “aligning first audio data with related second audio or video data before multiplexing” wherein “the output delay of the first audio data is adapted to the output time of the related second audio or video data” as in the present claimed invention.

Additionally, as discussed above and contrary to Zhang et al., the second data stream of the present invention is not altered. In fact, in the present claimed invention it is preferable that the “first audio data” stream is unaltered as well, except in the case wherein the delay constant is changed and results in an output time stamp is generated that represents a time that has already passed. (see page 3, line 35 and pages 6, lines 17 – 19). In this instance, as claimed in claim 3, “data with same or overlapping output time stamps appearing at delay reduction, the later data indicating output time stamps that are already passed are discarded”. As these discarded packets contain only a short duration of program material, they can be advantageously positioned during a program gap or a moment of switching between distinct program parts so as not to disturb the user (see page 5, lines 28 – 31 of the present specification). Therefore, it is clear that, in the present claimed invention, “the output delay of the first audio data is adapted to the output time of the related second audio or video data”. Zhang et al. neither disclose nor suggest this feature.

In view of the above remarks and amendments to the claims, it is respectfully submitted that the present claimed invention as claimed in claim 1 is not unpatentable in view of Zhang et al.. As claims 2 – 3 and 6 are dependent on claim 1, it is respectfully submitted that claims 2 – 3 and 6 are patentable for the same reasons as discussed above with specific reference to claim 1. Thus, it is further respectfully submitted that this rejection has been satisfied and should be withdrawn.

New claims 8 – 10 have been added for consideration by this response. Claims 8 and 9 are dependent upon amended claim 7 and claim 10 is dependent upon amended claim 1. Support for claims 8 – 10 can be found on page 3, line 17, page 4, line 38 and Figure 1 as well as on page 7, line 18 – 19 of the specification. Claim 8 and 9 is an apparatus claim and include limitations similar to original claim 4. New independent claim 10 states “the output delay is changed upon request of an operator”. This refers to the modification of the delay constant as shown in Figure 1 which is important as the constant cannot be changed too often so as not to disturb the program being output by the audio encoder (see page 5, lines 11 – 18 and 38 – 39 of the present specification). Zhang et al. also neither disclose nor suggest having “the output delay [is] changed upon request of an operator” as in the present claimed invention.

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Thus, as claims 8 – 9 are dependent on amended claim 7, it is respectfully submitted that claim 8 – 9 are patentable for the same reasons as claim 7. Additionally, it is also respectfully submitted that claim 10 is patentable as Zhang et al. neither disclose nor suggest that “the output delay is changed upon request of an operator”.

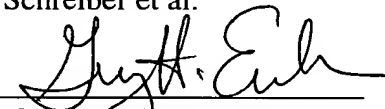
Having fully addressed the Examiner's rejections, it is believed that, in view of the preceding amendments and remarks, this application stands in condition for allowance. Accordingly then, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, the Examiner is invited to contact the applicant's attorney at the phone number below, so that a mutually convenient date and time for a telephonic interview may be scheduled.

No fee is believed due. However, if a fee is due, please charge the additional fee to Deposit Account 07-0832.

Respectfully submitted,

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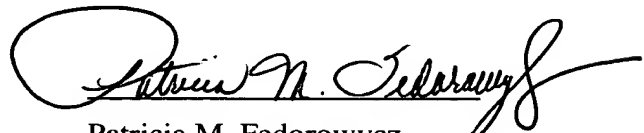
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